

AMENDMENTS TO THE CLAIMS

The following claim listing replaces all prior listings and versions thereof.

1. (Original) A retractable lens barrel comprising:

an annular ring having an axis parallel to and eccentric relative to an optical axis of the lens barrel;

a holder accommodated within the annular ring and supporting a holder lens group, the holder movable along a movement path between an aligned position where the holder lens group is aligned with said optical axis and a displaced position where the holder lens group is displaced relative to the optical axis;

a first lens group aligned with said optical axis and movable towards said annular ring during accommodation of said first lens group within said annular ring;

a first actuator of an exposure control component, the first actuator positioned inside said annular ring in a first space between an inner peripheral surface of said annular ring and an outer edge of said first lens group accommodated in said annular ring; and

a second actuator of said exposure control component, the second actuator being positioned inside said annular ring in a second space between the inner peripheral surface of said annular ring and said movement path of said holder lens group.

2. (Original) The retractable lens barrel according to claim 1, wherein the optical axis is disposed to one side relative to the annular ring axis, and wherein the axis of said displaced position is disposed to another side relative to the annular ring axis.

3. (Original) The retractable lens barrel according to claim 1, wherein said axis of

said displaced position, said annular ring axis, and optical axis each lie substantially in a straight line.

4. (Original) A retracting lens barrel according to claim 1, wherein the holder is pivotally connected to said annular ring to move between said aligned position and said displaced position.

5. (Original) The retractable lens barrel according to claim 1, further comprising a rear lens group movable towards said annular ring and accommodated within the inner peripheral surface of the annular ring at the aligned position of said holder lens group, when the holder lens group has moved to said displaced position.

6. (Original) The retractable lens barrel according to claims 5, wherein when said rear lens group is accommodated within said annular ring, a portion of said rear lens group and a portion of said holder lens group are at substantially the same position on said annular ring axis.

7. (Original) The retractable lens barrel according to claim 1, wherein said first actuator comprises a shutter actuator and said second actuator comprises a diaphragm actuator.

8. (Original) The retractable lens barrel according to claim 1, wherein said exposure control component and said first and second actuators comprise a subassembly attached to said annular ring.

9. (Original) The retractable lens barrel according to claim 8, wherein said annular ring comprises an inner flange which projects radially inwards therefrom and configured to

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limit movement of said exposure control component in said optical axis direction, said first and second actuators positioned on opposite sides of said inner flange in said optical axis direction, respectively.

10. (Original) The retractable lens barrel according to claim 1, wherein said annular ring is movable linearly along said axis thereof without rotating;

wherein said holder lens group is configured to move together with said annular ring in said annular ring axis direction; and

wherein said retractable lens barrel further comprises an optical element retracting mechanism that retracts said holder lens group to said displaced position by a retracting movement of said annular ring when said retractable lens barrel moves from an operational state to a retracted state.

11. (Original) The retractable lens barrel according to claim 10, further comprising at least one rotatable ring positioned concentrically with said annular ring to move said annular ring linearly along said axis thereof by a rotation of said rotatable ring.

12. (Original) The retractable lens barrel according to claim 11, wherein said at least one rotatable ring comprises a cam ring including cam grooves.

13. (Original) The retractable lens barrel according to claim 11, wherein said at least one rotatable ring comprises a ring gear configured to be driven by motor.

14. (Original) The retractable lens barrel according to claim 1, further comprising an axis position adjustment device positioned inside said annular ring configured to adjust the position of said holder lens group along said optical axis;

wherein said axis position adjustment device and the second actuator are positioned at different circumferential positions about said annular ring axis.

15. (Original) The retracting lens barrel according to claim 1, wherein the retractable lens barrel is incorporated in a camera.

16. (Previously Presented) A retractable lens barrel comprising:
a plurality of optical components including a front lens group, a middle lens group, a rear lens group and at least one exposure control component which are positioned on a photographing optical axis in an operational state of said lens barrel;

a annular ring which accommodates said plurality of optical components in a retracted state of said lens barrel; and

at least two actuators configured to actuate said at least one exposure control component,

wherein said photographing optical axis is parallel and eccentric to an axis of said annular ring;

wherein, when said lens barrel moves from said operational state to said retracted state, said front lens group and said rear lens group are moved rearward while approaching each other along said photographing optical axis, said middle lens group is retracted to a radially retracted position on an opposite side of said axis of said annular ring from said photographing optical axis, and said middle lens group is moved rearward in said photographing optical axis direction such that at least a portion of said middle lens group and at least a portion of said rear lens group are in substantially a same positional range in

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the optical axis direction;

wherein one of said at least two actuators is positioned inside said annular ring in a first space between an inner peripheral surface of said annular ring and an outer edge of said front lens group accommodated in said annular ring, and

wherein said the other of said at least two actuators is positioned inside said annular ring in a second space between an inner peripheral surface of said annular ring and an outer edge of said rear lens group accommodated in said annular ring, and is positioned outside a moving path of said middle lens group at a position different from a position of said one of said two actuators in said photographing optical axis direction.

17. (Previously Presented) A digital camera having a body and a retractable lens barrel, the retractable lens barrel housed within the body and comprising:

an annular ring having an axis parallel to and eccentric relative to an optical axis of the lens barrel;

a holder accommodated within the annular ring and supporting a holder lens group, the holder movable along a movement path between an aligned position where the holder lens group is aligned with said optical axis and a displaced position where the holder lens group is displaced relative to the optical axis;

a first lens group aligned with said optical axis and movable towards said annular ring during accommodation of said first lens group within said annular ring;

a first actuator of an exposure control component, the first actuator positioned inside said annular ring in a first space between an inner peripheral surface of said annular ring

and an outer edge of said first lens group accommodated in said annular ring; and a second actuator of said exposure control component, the second actuator being positioned inside said annular ring in a second space between the inner peripheral surface of said annular ring and said movement path of said holder lens group.

18. (Previously Presented) The camera according to claim 17, wherein the optical axis is disposed to one side relative to the annular ring axis, and wherein the axis of said displaced position is disposed to another side relative to the annular ring axis.

19. (Previously Presented) The camera according to claim 17, wherein said axis of said displaced position, said annular ring axis, and optical axis each lie substantially in a straight line.

20. (Currently Amended) ~~A retracting lens barrel~~ The camera according to claim 17, wherein the holder is pivotally connected to said annular ring to move between said aligned position and said displaced position.

21. (Previously Presented) The camera according to claim 17, further comprising a rear lens group movable towards said annular ring and accommodated within the inner peripheral surface of the annular ring at the aligned position of said holder lens group, when the holder lens group has moved to said displaced position.

22. (Previously Presented) The camera according to claim 17, wherein said first actuator comprises a shutter actuator and said second actuator comprises a diaphragm actuator.

23. (Previously Presented) The camera according to claim 17, wherein said

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exposure control component and said first and second actuators comprise a subassembly attached to said annular ring.

24. (Previously Presented) The camera according to claim 17, wherein said annular ring is movable linearly along said axis thereof without rotating;

wherein said holder lens group is configured to move together with said annular ring in said annular ring axis direction; and

wherein said retractable lens barrel further comprises an optical element retracting mechanism that retracts said holder lens group to said displaced position by a retracting movement of said annular ring when said retractable lens barrel moves from an operational state to a retracted state.

25. (Previously Presented) The camera according to claim 17, further comprising an axis position adjustment device positioned inside said annular ring configured to adjust the position of said holder lens group along said optical axis;

wherein said axis position adjustment device and the second actuator are positioned at different circumferential positions about said annular ring axis.

26. (New) A digital camera comprising:

a body;

an image pick-up device disposed within said body;

an image display panel connected to said body for displaying an image picked up by the image pick-up device;

an annular ring accommodated within said body and having an axis parallel to

and eccentric relative to an optical axis of the digital camera;

a holder accommodated within the annular ring and supporting a holder lens group, the holder movable along a movement path between an aligned position where the holder lens group is aligned with said optical axis and a displaced position where the holder lens group is displaced relative to the optical axis;

a first lens group aligned with said optical axis and movable towards said annular ring during accommodation of said first lens group within said annular ring;

a first actuator of an exposure control component, the first actuator positioned inside said annular ring in a first space between an inner peripheral surface of said annular ring and an outer edge of said first lens group accommodated in said annular ring; and

a second actuator of said exposure control component, the second actuator being positioned inside said annular ring in a second space between the inner peripheral surface of said annular ring and said movement path of said holder lens group.

27. (New) The camera according to claim 26, wherein the optical axis is disposed to one side relative to the annular ring axis, and wherein the axis of said displaced position is disposed to another side relative to the annular ring axis.

28. (New) The camera according to claim 26, wherein said axis of said displaced position, said annular ring axis, and optical axis each lie substantially in a straight line.

29. (New) The camera according to claim 26, wherein the holder is pivotally connected to said annular ring to move between said aligned position and said displaced position.

30. (New) The camera according to claim 26, further comprising a rear lens group movable towards said annular ring and accommodated within the inner peripheral surface of the annular ring at the aligned position of said holder lens group, when the holder lens group has moved to said displaced position.

31. (New) The camera according to claim 26, wherein said first actuator comprises a shutter actuator and said second actuator comprises a diaphragm actuator.

32. (New) The camera according to claim 26, wherein said exposure control component and said first and second actuators comprise a subassembly attached to said annular ring.

33. (New) The camera according to claim 26, wherein said annular ring is movable linearly along said axis thereof without rotating; and
wherein said holder lens group is configured to move together with said annular ring in said annular ring axis direction;

the camera further comprising an optical element retracting mechanism that retracts said holder lens group to said displaced position by a retracting movement of said annular ring when the camera moves from an operational state to a non-operational state.

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34. (New) The camera according to claim 26, further comprising an axis position adjustment device positioned inside said annular ring configured to adjust the position of said holder lens group along said optical axis;

wherein said axis position adjustment device and the second actuator are positioned at different circumferential positions about said annular ring axis.

35. (New) The camera according to claim 26, wherein said image display panel is an LCD.